REMARKS

The amendments to the claims are supported by the Specification. For example, support for the amendments to Claims 1, 8, and 22 includes page 3, lines 2-7, Figure 1 and the accompanying discussion thereof, and page 6, lines 16-18.

In the Advisory Action mailed December 30, 2003, the Examiner renews his rejection of the pending claims based on Abrams (WO 90/09289). The Examiner states that Abrams teaches that the binder adhesive is cross-linked, which implies that the adhesive is a thermoset. The Examiner further states that it would be obvious to place the applique of Abrams in the mold of Masui (U.S. 5,053,179) to provide the claimed invention.

Applicants respectfully traverse the Examiner's rejection. Applicant respectfully submits that neither Abrams nor Masui, individually or collectively, teach or suggest at least the following italicized features of the rejected independent claims:

> 1. A method of decorating a molded article comprising:
> providing a transfer having a flocking layer, a release sheet on one side of the flocking and a layer of a permanent adhesive on an opposite side of the flocking *to adhere the transfer to the molded article;*
> *securing the release sheet to an interior wall of a mold in which the article is made;* and
> *molding the part such that the resin contacts the layer of permanent adhesive, wherein the temperature of the resin in the mold is less than a melting point of the permanent adhesive;*
> cooling the mold;
> ejecting the part; and
> removing the release sheet from the transfer.
>
> 8. A method of decorating a molded article comprising:
> coating a release sheet with a release adhesive;
> flocking flock into said release adhesive by embedding a first end of said flock into the release adhesive to result in at least one pattern of flock arranged to form a predetermined design adhered to said release sheet;
> applying a permanent adhesive to an opposite side of the flocking;
> affixing said release sheet to the interior surface of a mold; and

introducing a molten resin in said mold to form a molded article; *said permanent adhesive permanently bonding said flock to said article, wherein, under the thermal conditions experienced by the permanent adhesive during the molding step, the permanent adhesive does not liquefy and ooze out around the flock and wherein the permanent adhesive is positioned between the flock and the resin and cross-linked with a polymeric material in a portion of the molded article.*

22. A method for producing a molded article, comprising:

providing a flocked structure, the flocked structure comprising a plurality of flock fibers adhered to a permanent adhesive;

positioning the flocked structure in a part of a mold;

introducing a molten resin into the mold while the flocked structure is positioned in the mold; and

after solidification of the resin, removing from the mold a molded article comprising the flocked structure, *wherein a melting temperature of the permanent adhesive is greater than the maximum temperature experienced by the permanent adhesive during the introducing step, wherein the molded article comprises the flock fibers and permanent adhesive and a molded part, wherein the permanent adhesive is positioned between the flock fibers and the molded part, and wherein the permanent adhesive is cross-linked with a polymeric material in a portion of the molded part.*

57. A method for producing a molded article, comprising:

providing a flocked structure, the flocked structure comprising a plurality of flock fibers and a permanent adhesive;

positioning the flocked structure in a part of the mold;

introducing a molten resin into the mold after closure of the mold while the flocked structure is positioned in the mold to form the molded article, the molded article comprising a molded part, the flock fibers, and permanent adhesive, wherein the molded part comprises the resin, *wherein the permanent adhesive is positioned between the flock fibers and the molded part, wherein there is no hot melt adhesive layer located between the flocked structure and molded part, and wherein, at the maximum temperature experienced by the permanent adhesive in the mold, the permanent adhesive does not ooze out around the flock fibers.*

Masui et al.

Masui et al. is directed to a process for producing a multilayer molded article which includes supplying at least one piece of skin material having a desired shape and a resin melt between unclosed upper and lower molds and closing the molds to form a multilayer molded article including

the thermoplastic resin and the skin material. The skin material is lifted by a rod to a position at which the skin material contacts a cavity surface of the upper mold. The resin is then supplied between the upper and lower molds and the rod is returned to a determined position before the molding is complete. As noted by the Examiner, Masui et al. does not teach using a film having a flocking layer, a release layer, and a layer of binder on an opposite side of the flocking and removing a release sheet from a transfer.

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The Abrams PCT is directed to a method of making an applique that involves, with reference to Fig. 1, applying a release adhesive 6 upon a release sheet 4, flocking flock 8 onto the release adhesive 6, and applying a binding adhesive 10 to free ends of the flock 8. A hot melt adhesive 12 is thereafter applied to the binding adhesive 10. The binder adhesive can include an acrylic dispersion which is cross-linkable at higher temperatures. The reference does not teach what the "higher" temperatures are. Nonetheless, the Examiner states that "a cross-linked substance cannot be reshaped or melted to be reshaped." (Office Action at page 4.)

The problem with the Examiner's reliance on the Abrams PCT in rejecting the claims is that, if the transfer of the Abrams PCT were to be used in place of the skin material in the molding process of Masui et al., there would be a hot melt adhesive layer 12 located between the binder adhesive 10 and the molten resin. The hot melt adhesive layer 12 would prevent the binder adhesive 10 from bonding with the molded part of the molded article. Moreover, the hot melt adhesive layer 12 would liquefy and ooze out around the flocked structure, which could interfere not only with the bond between the flocked structure and the resin but also gum up the flock fibers.

Contrary to the assertions of the Examiner, the Abrams PCT is clear regarding the necessity of having a hot melt adhesive layer present. At page 6, lines 22-26, the Abrams PCT states:

> For purposes of the present invention, the binding adhesive *is* a hot melt adhesive, preferably selected from the group consisting of polyurethane, polyester, and nylon, which may be applied as a separate adhesive layer to ends of the flock.

(Emphasis supplied.)

In the quoted language, the Abrams PCT states unequivocally that the binding adhesive is a hot melt adhesive. A hot melt adhesive is defined by (*Hawley's Condensed Chemical Dictionary*, 12th ed., revised by Richard J. Lewis, Sr., p. 19, 1993 (emphasis supplied)) as "[a] solid, *thermoplastic* material *which quickly melts upon heating*, and then sets to a firm bond on cooling." According to the Hot Melt Adhesives Technology Review previously provided to the Examiner:

> Hot melt adhesives have some limitations that must be recognized. Hot melts cannot be used with heat sensitive substrates; the adhesive bonds lose strength at high temperatures; chemical resistance may be lacking with some types of hot melts; *and exposure to high temperature environments can cause the adhesive to melt. Consequently, hot melt adhesives are inappropriate in situations where these limitations cannot be avoided.* For example, hot melts should not be used on a substrate that would be near a heat source, such as a kitchen cabinet that would be placed near an oven. However, innovations in hot melts are removing some of these limitations.

(Emphasis supplied.) A hot melt adhesive would thus not have a melting point higher than the temperature of the molten resin, as required by the claims.

The Abrams PCT introduces confusion about the precise contents of the binder adhesive by stating at page 7, lines 17-23:

> The binder adhesive is a resin, preferably selected from the group consisting of polyvinyl chloride, polyvinyl acetate, polyurethane, polyester polyamide, and acrylic resin, such as a water based acrylic resin, and *may* also include a hot melt adhesive, such as a hot melt adhesive selected from the group consisting of polyurethane, polyester and nylon, which is preferably applied as a separate adhesive layer.

See also page 12, lines 2-5 (Emphasis supplied).

Elsewhere, Abrams PCT states in clear terms that the flock 8 of the flock-covered release sheet 4 is coated with a binder adhesive 10, such as a water based acrylic, "which binds the flock into a unit and *is a barrier for the hot melt.*" (Abrams PCT at page 11, lines 19-20 (emphasis supplied); *see also* page 17, lines 11-14.)

From these teachings, it is apparent that the water based acrylic, which is described as being cross linkable, may be positioned between the hot melt adhesive 12 and the flock 8 and that a hot melt adhesive is always present in the applique, as shown in Fig. 1. It may be present as the binder adhesive 10 or as a separate layer 12 adjacent to the binder adhesive 10. Although stating that the hot melt adhesive 12 "may form a separate layer", the paragraph referenced by the Examiner at page 12, lines 6-12, also states that the use of "separate" hot melt layers is preferred. This paragraph seems to say that there may be one or multiple hot melt layers in the applique. In either case, there is always a hot melt layer present. Additionally, examples 1 and 2 both describe the use of a cross-linkable acrylic between a hot melt adhesive and the flock.

In addition to the deficiencies of the Abrams PCT, there is no incentive or motivation to one of ordinary skill in the art to place the applique of the Abrams PCT in the mold of Masui et al. It is far from clear that the cross-linkable acrylic adhesive or hot melt adhesive would form a permanent bond with a molten, typically thermoplastic, resin. There are a number of factors which must be satisfied for an effective bond to form between the permanent adhesive and the resin. For example, the adhesive and resin must be melt, thermally, and chemically compatible. The most common resin is a polyester, and the acrylic adhesive of Abrams PCT is not a polyester; therefore, melt compatibility is far from a certainty. The permanent adhesive must be thermally stable under the

conditions of the mold to maintain a strong adhesive bond and assist in preventing the resin from entering the spaces between the flock fibers. Such entry would destroy the plush feel of the flocked surface. The permanent adhesive should bond directly with the molded part. It is far from clear that an acrylic will form a suitable bond with a polymeric material, such as a polyester. Even if one of ordinary skill in the art would expect that the acrylic adhesive would possess these characteristics, the impact of placing the applique in the mold on the resiliency of the flock fibers would be unknown. Matting of the flock fibers would produce an unattractive and worthless molded article.

JP 560855524 and Banfield fail to overcome the deficiencies of Masui et al. and Abrams.

Accordingly, the pending claims are allowable.

The dependent claims provide additional reasons for allowance.

By way of example, Claims 3, 18, 28, and 60 require the permanent adhesive to be a thermosetting polyester while the Abrams PCT teaches that the adhesive is an acrylic.

Claims 11, 23, 54-56, and 59 require the permanent adhesive to be free of a hot melt adhesive. As noted above, the Abrams PCT teaches that the binder adhesive either is a hot melt adhesive or is in contact with a separate hot melt adhesive layer.

The Examiner's statements that the use of two injection pressures as required by claim 12, the use of a thermosetting adhesive in the molding art as required in claims 18, 20, and 60, and the the forming of the flocked structure into a nonplanar, three-dimensional shape before molding as required by claims 66 to 69 are well known are not supported by documentary evidence. It is well established that obviousness cannot be based on a finding of common knowledge unsupported by documentary evidence. *In re Lee*, 61 U.S.P.Q.2d 1430 (Fed. Cir. 2002).

Dependent claims 66 to 69 require the flocked structure to be formed into a nonplanar, three-dimensional shape before molding. This is done to resist shear forces exerted on the structure during molding. Masui et al. does not teach or suggest this step but rather teaches that the skin material is planar in shape (Figures 3 -14). Masui et al. thus *teaches away* from the use of a three-dimensional shape. It cannot therefore be combined with any teaching that a decorative surface is formed into a three-dimensional shape before molding.

Based upon the foregoing, Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

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